

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

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State of Oklahoma,	)	<b>Case No. 4:05-cv-00329-GKF-PJC</b>
	)	
Plaintiff,	)	
	)	
vs.	)	<b>THE CARGILL DEFENDANTS’ RESPONSE IN OPPOSITION TO PLAINTIFFS’ MOTION IN LIMINE TO PRECLUDE EXPERT TESTIMONY OF DR. BRIAN MURPHY</b>
Tyson Foods, Inc., et al.,	)	
	)	
Defendants.	)	

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Plaintiffs seek to exclude at trial the useful and reliable expert opinions of the Cargill Defendants’ environmental forensics expert Dr. Brian Murphy. (Dkt. No. 2074.) Plaintiffs’ motion inaccurately portrays the substance of Dr. Murphy’s opinions in an effort to depict them as irrelevant or scientifically flawed. Because there is no sound reason to prevent the jury from benefiting from Dr. Murphy’s testimony, the Cargill Defendants respectfully request that the Court deny the motion to exclude.

Dr. Murphy’s work and Plaintiffs’ motion center largely on Principal Component Analysis (“PCA”). As Dr. Murphy describes, “PCA is similar to the children’s game of ‘one of these things is not like the others.’” (Ex. A: Murphy R. at 13.)<sup>1</sup> PCA is but one of a number of “multivariate” statistical methods designed to objectively analyze data where the number of variables (also called “analytes”) and/or samples is large. (*Id.*; see also 13-15 for a more detailed discussion of PCA.) As a matter of logic, “[t]o be valid and useful, a PCA must be based on appropriate variables, must be conducted correctly, and must be interpreted in an appropriate

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<sup>1</sup> Plaintiffs did not provide the Court Dr. Murphy’s entire expert Report, choosing instead to attach to their Daubert motion only a few nonconsecutive pages. (Dkt. No. 2074-2.) So that the Court may have the full context of Dr. Murphy’s Report in considering Plaintiffs’ motion, the Cargill Defendants attach the whole report as Ex. A.

manner.” (Id. at 13.)

Among other credentials, Dr. Murphy holds both masters and doctorate degrees in theoretical physics from Yale and has been a visiting instructor at Harvard’s School of Public Health. (Ex. A: Murphy R. at 11-12, Attach. A at 1-2.) He has more than 30 years of work experience in data analysis and mathematical modeling of pollutant fate and transport in various media, and has authored more than 30 journal publications. (Id. at Attach. A at 1-4.) He literally helped write the book on environmental forensics – including a chapter on PCA – having co-edited Introduction to Environmental Forensics and Environmental Forensics: Contaminant Specific Guide, treatises relied upon by experts in the field. (Id. at Attach. A at 1, 4; see also Ex. B: Cowan Dep. at 124:7 – 124:10 (referring to Dr. Murphy’s treatise); Ex. C: Glenn Johnson R. at 72; Ex. F: Glenn Johnson Dep. at 188:21-25 (discussing the chapter Dr. Johnson wrote on PCA contained in Dr. Murphy’s treatise.) Dr. Murphy also sits on the editorial board of the Environmental Forensics journal. (Ex. A: Murphy R. at Attach. A at 1.) Over the last thirty years, he has consulted NATO, the EPA, the U.S. Department of Commerce, the U.S. Department of Defense, and the National Academy of Sciences, among other groups. (Id. at Attach. A at 1, 8-18; see also, e.g., Ex. D: Murphy Dep. at 41:17 – 42:7, noting Dr. Murphy’s work for the DOJ on the Love Canal incident.) And he has testified in more than twenty different matters during that tenure, and provided consulting expert support on many more. (Ex. A at Attach. A at 19-20.) In the face of such patent qualifications to render his opinions, Plaintiffs assert no challenge to Dr. Murphy’s knowledge, skill, experience, training, or education. (See generally Dkt. No. 2074.)

Dr. Murphy was engaged both to examine and rebut Dr. Roger Olsen’s expert opinions, including Dr. Olsen’s use of PCA, and to analyze whether Dr. Olsen’s work supports a

conclusion that any Cargill-related grower is responsible for determinable downstream concentrations of chemical and bacterial content. (Ex. A: Murphy R. at 8, 11.) Dr. Murphy principally concluded that:

- 1) The Cargill contract grower data used by Dr. Olsen in his PCA are either too limited to draw conclusions, or lead to conclusions *opposite* those drawn by Dr. Olsen. (E.g., id. at 8-9.)
- 2) Dr. Olsen's interpretation of his PCA results is both unconventional and improper. (E.g., id. at 9-10.)
- 3) Dr. Olsen made a fundamental mathematical error that rendered all of his results invalid. (E.g., id. at 10.)
- 4) Because Dr. Olsen did not combine solid and liquid samples in the same analysis, his PCA is not a true "pathway" analysis. A multimedia analysis indicates that Cargill-related growers are not contributing determinable downstream concentrations. (E.g., id.)

In essence, Dr. Murphy opines that Dr. Olsen's PCA interpretation is unreliable and flawed because he failed to include the potential source [i.e. solid litter] in his analysis, and that when the potential source is included no poultry litter signature carries through the environmental media. (Id. at 8-10.) As a result, Dr. Olsen's analysis does not show fate-and-transport of phosphates from Cargill-related locations [the hypothetical sources] to the waters or sediments of the IRW [the receptor]. (Id. at 8-10, 33.) In an effort to prevent Dr. Murphy's **conclusions** from reaching the jury, Plaintiffs attack one of the fathers of environmental forensics use of PCA.

Plaintiffs base their Daubert motion on a claim that "Dr. Murphy's criticism of Dr. Olsen's PCA analysis [*sic*] is based on the assertion that Dr. Olsen's analysis is incorrect, because he did the PCA analysis [*sic*] on water samples only" and that "Dr. Olsen should have employed a 'Multimedia PCA' ...." (Dkt. No. 2074 at 1-2.) However, this challenge completely misses the point of Dr. Murphy's primary criticisms of Dr. Olsen (which are along the same lines as the critiques offered by Defendants' experts Drs. Glenn Johnson and Charles Cowan). Like

Drs. Cowan and Johnson, Dr. Murphy opines that Dr. Olsen’s entire analysis is flawed because he “failed to select sufficient analytes that were common to poultry litter, or even living organisms,” he “made a fundamental mathematical error that renders all of his results invalid,” and his “interpretation of his PCA results is unconventional and improper.” (Ex. A: Murphy R. at 8-10). None of these foregoing critiques involve Dr. Olsen’s additional failure to include the hypothetical source – actual poultry litter – in his PCA, which he could have done had he employed a multimedia PCA combining solid and liquid samples in the same PCA so as to reflect a “true pathway analysis” including both source and receptor. (Id. at 10.)

### **LEGAL STANDARD**

The Court should permit the jury to access Dr. Murphy’s expert testimony if the Court finds it is reliable, relevant, and will assist the jury. See, e.g., United States v. Nacchio, 555 F.3d 1234, 1241 (10th Cir. 2009) (citing, e.g., Fed. R. Evid. 702). In making this determination, the Court must first assess whether Dr. Murphy is “qualified ‘by knowledge, skill, experience, training, or education’ to render an opinion.” See id. (quoting Fed. R. Evid. 702). Here, Plaintiffs do not dispute that Dr. Murphy is qualified to render his expert opinions. (See generally Dkt. No. 2074.)

Because Dr. Murphy is undisputedly qualified, the Court’s evaluation centers on 1) whether his proposed opinion will assist the jury – that is, whether it is relevant, and 2) whether it is reliable, which this Court must determine “by assessing the underlying reasoning and methodology.” Nacchio, 555 F.3d at 1241 (citations omitted); Fed. R. Evid. 702; accord McKenzie v. Benton, 388 F.3d 1342, 1352 (10th Cir. 2004). As the offering party, the Cargill Defendants must show that “the method employed” by Dr. Murphy “is scientifically sound and that the opinion is based on facts which satisfy Rule 702’s reliability requirements.” Id. (internal

quotations and citations omitted). “The focus, of course, must be solely on principles and methodology, not on the conclusions they generate.” AG of Okla. v. Tyson Foods, Inc., 565 F.3d 769, 779-80 (10th Cir. 2009) (quoting Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 595 (1993)). “[W]hen experts employ established methods in their usual manner, a district court need not take issue under Daubert ...” Id. at 780.

## **ARGUMENT**

Plaintiffs assert two challenges to Dr. Murphy’s expert opinions. First, Plaintiffs ask the Court to exclude Dr. Murphy’s multimedia PCA work, despite the fact that the environment at issue involves multiple media (solids and liquids). Second, Plaintiffs ask the Court to prevent the jury from hearing Dr. Murphy’s conclusions that Plaintiffs have identified no evidence that the Cargill Defendants’ contract growers have caused any determinable impact on IRW water quality. (Dkt. No. 2074 at 1.) Plaintiffs do not challenge the remainder of Dr. Murphy’s Report or the opinions expressed therein.

Because Dr. Murphy’s credentials are impeccable, his methodologies reliable, and his opinions will assist the trier of fact to understand key issues in this case, the Court should deny Plaintiffs’ meritless motion. See, e.g., Nacchio, 555 F.3d at 1241.

### **A. Dr. Murphy’s PCA Opinions Are Beyond Reproach.**

Despite making no formal challenge to Dr. Murphy’s credentials, Plaintiffs nonetheless attempt to discredit Dr. Murphy by focusing on one aspect of his opinion and suggesting that Dr. Olsen found that a multimedia PCA “would not be scientifically justified” in this case. (Dkt. No. 2074 at 3.) To substantiate this allegation, Plaintiffs contend that “Dr. Olsen was able to identify contaminated IRW waters in relationship to the best representation of what water contaminated by poultry waste would be like” rather than to *actual* contaminated water “because [he]

recognized that, due to chemical reactions that occur when poultry waste constituents dissolve in water, the PCA fingerprint would not be preserved from one medium ... to the next ....” (Id.) This argument, far from undercutting Dr. Murphy’s opinion, actually demonstrates that Dr. Olsen’s “PCA fingerprint” does not actually show land-applied poultry litter in any of the waters of the IRW.

Dr. Murphy conducted his own PCA using Dr. Olsen’s data to determine whether any poultry litter signature in fact carried through the environmental media when the PCA is performed properly. (Ex. A: Murphy R. at 17, 18-22, 30-33.) Dr. Murphy did what Plaintiffs’ expert failed to do; he included the sample data for the actual source of hypothetical contaminants – poultry litter – in his analysis to determine whether there exists any signature from that putative source, and whether that signature is *actually* present in soil, sediment, or water samples collected in the IRW. (See id.; see also Ex. E: Murphy Decl. ¶ 9.)<sup>2</sup> He concluded that there is no such signature present in any of the environmental sample data, and that all Dr. Olsen showed was that the components of native soil runoff from fields and are transported through the waters of the IRW. (See Ex. A: Murphy R. at 8, 21-22, 26-29, 32-33.)

Dr. Murphy further explained why Dr. Olsen’s reliance on edge-of-field sample data compromises his conclusions: 1) Edge-of-field samples contain native soil. 2) Using Dr. Olsen’s methodology, a poultry litter signature (if one existed) could not be distinguished from the signature of native soils. (See id. at e.g., at 10,16, 32-33; Ex. D: Murphy Dep. at 70:7 – 71:3, 90:15 – 90:25,) This testimony will be helpful to the jury in understanding the weaknesses of Plaintiffs’ expert opinions and the lack of any evidence showing fate-and-transport of phosphates

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<sup>2</sup> Dr. Murphy submits this limited declaration only to counter the new charges raised in the inappropriate declaration of Plaintiffs’ experts Jim Loftis, which is subject to a motion to strike.

from the fields of Cargill contract grower operations. As Dr. Murphy's opinions are highly probative of facts that will be at issue at trial, his opinion is relevant for purposes of Daubert and Federal of Evidence 702. See Nacchio, 555 F.3d at 1241; McKenzie, 388 F.3d at 1351.

**B. Dr. Murphy's Opinions Are Scientifically Reliable.**

The thrust of Dr. Murphy's opinion is that Dr. Olsen did not interpret Dr. Olsen's own PCA properly, and that Dr. Olsen's PCA could not be used to analyze fate-and-transport from Cargill locations, nor could it be used to identify a poultry litter signature anywhere in the watershed. Without endorsing the data or methodology that Dr. Olsen applied in his PCA, Dr. Murphy then performed his own PCA using Dr. Olsen's data set while correcting for Dr. Olsen's flawed methodology and mathematical errors, and concluded that a properly conducted PCA of the data relied upon by Plaintiffs fails to show any fate-and-transport of phosphates from any Cargill grower location to the waters of the IRW. (Ex. A: Murphy R. at 17, 18-22, 32-33.)

Plaintiffs do not attack Dr. Murphy's opinion or methodology on the basis that his interpretation of the PCA he performed lacks reliability. Rather, Plaintiffs simply take issue with the fact that Dr. Murphy conducted a multimedia PCA as part of his work. (See Dkt. No. 2074 at 2.) Because Plaintiffs do not – and indeed in fairness could not – argue that Dr. Murphy's opinions themselves or the methodologies he employed are unreliable, they assert no viable ground for exclusion.

**1. Dr. Murphy Did Not Disavow the Validity of Multimedia PCA.**

Plaintiffs mischaracterize Dr. Murphy's deposition testimony and expert report to suggest he somehow conceded that the multimedia PCA he conducted is invalid. (See Dkt. No. 2074 at 2-3.) The record shows that Plaintiffs' assertion is unfounded.

The two instances Plaintiffs cite in their motion relate to (1) a hypothetical that is not

germane to the case at hand and (2) a prior project on which Dr. Murphy worked that has no bearing here. (See id., citing Murphy Dep. at 49:19 – 50:12, 51:23 – 52:3, 165:12-21, 410:3-25.) The deposition snippets in Plaintiffs’ motion take Dr. Murphy’s testimony out of context in an effort to make it seem as if he somehow conceded that multimedia PCA is invalid.

In fact, Dr. Murphy testified that he had not used multimedia PCA in two prior cases because in those cases it was not necessary. In those cases, the source either had already been isolated or the purpose of the PCA was simply to determine whether a connection existed between an occurrence of contamination and pyrite disposal locations. With respect to the pyrite case, Dr. Murphy testified as follows:

Q And when you did your PCA analysis, did you do your soils and groundwater analysis in the same runs as the same – you combined the medias?

A I don’t believe in that case that I did.

Q Why not?

A Well, I was really just trying to feel my way. I find that principle component analysis is most useful for seeing what’s going on in a site and not necessarily the best technique for explaining it to a judge or jury, and so I was really just trying to find my way, and my conclusion was that the contamination was pretty uniform across the site. Wherever there was buried pyrite, you found this contamination.

\* \* \*

Q Were you able to establish any relationship between the groundwater contamination and the soils contamination that you investigated?

A Only that it was downgradient and it contained arsenic and lead, which, again, were the contaminants of concern.

(Ex. D: Murphy Dep. at 11:5 – 12:2.) Because Dr. Murphy’s task in that project was much more rudimentary than his work in the instant case, his decision not to utilize a multimedia PCA in that instance in no way suggests that the methodologies underlying his instant opinions are so unreliable as to fail under Daubert.

Plaintiffs likewise err in asserting that “Dr. Murphy also testified that Multimedia PCA is not effective in identifying sources of contamination ...” (Dkt. No. 2074 at 2, emphasis omitted,



citing Murphy Dep. at 49:19 – 50:12, 410:3-25.) In those portions of his testimony, Dr. Murphy was discussing a prior case with entirely different contaminants that has no bearing on the kinds of analyses required here. Dr. Murphy explained that the use of PCA in that investigation is not germane to the issues at hand because it was an entirely different system and environment, and involved entirely different kinds of contaminants that have different transport properties in the environment:

Q Okay. Would you just describe that particular matter for us, sir?

A It involves contamination at a location in Maine, in a harbor in Maine, and the issue was whether the contamination results from a manufactured gas plant that's located not too far away, whether it results from historical coal storage along the river front and/or whether it results from some other type of source.

Q What are the chemicals of concern?

A The chemicals of concern are various tars containing PAHs, as well as monocyclic compounds such as benzene.

Q And what media has been contaminated?

A Sediments in the river, as well as soils, but I believe a remediation is mostly of the sediments in the river.

Q And how did you employ PCA in your analysis in that case?

A I looked at the fingerprint of the various locations, locations associated with the manufactured gas plant, locations associated with the – a historic pipeline leading down to the harbor, looked at the fingerprint in the sediments, as well as in the soils.

Q Did your PCA involve more than one media?

A It did, although not at the same time.

Q Okay. So you did a separate, let's say, liquids media PCA from a solids media PCA?

A Yes.

Q Why did you not combine them together in that case?

A Well, because the fingerprint isn't preserved going from one medium to another. Again, different PAHs have different transport properties in the environment.

(Ex. D: Murphy Dep. at 49:2 – 50:12.) Dr. Murphy further explained that multimedia PCA may not be very useful in instances like the Maine harbor where the patterns between contaminants change from media to media. “At least it's not going to be useful for

determining sources. It may be useful for defining fate and transport differences.” (Id. at 410:3-25.)

Dr. Murphy testified that he did not do an exhaustive search for references for multimedia PCAs, and that although he was not aware of any multimedia investigations where the contaminants of concern were nutrients, he was aware of others that investigated metals.

Q Other than your work in this particular case, can you provide any references for multimedia PCA analysis that you’re suggesting?

A I think I give you a couple of references in the text to multimedia PCA.

Q You provide two; that’s correct?

A Yes. I haven’t tried to be exhaustive. I’m sure I could come up with many more.

Q What were the chemicals of concern there?

MS. COLLINS: Page 30, sir.

A Yes, thank you. I – in both cases there are dibenzodioxins and dibenzofurans.

Q (BY MR. PAGE) Can you identify any multimedia investigation where the contaminants of concern were nutrients?

A Not nutrients, but I know other people at Exponent have done multimedia for various metals.

(Id. at 103:19 – 104:10.) Further, Dr. Olsen himself mixed solid and liquid media in some of his own PC analyses, although he failed to include the putative source, poultry litter, nor a complete pathway. (See Olsen R. at 6-9, 6-27, 6-66, and 6-67.)

In sum, the Court should give no weight to Plaintiffs’ distortions of Dr. Murphy’s testimony regarding multimedia PCA.

## **2. Dr. Murphy Explained that Multimedia Analysis Is Inherent in Any PCA Investigating Solid Sources in Liquid Media.**

Contrary to Plaintiffs’ mischaracterizations, Dr. Murphy fully justified his use of multimedia analysis in the circumstances here. Dr. Loftis contends that multimedia PCA is not appropriate in the IRW because of the “type of system” involved. (Loftis Dec. ¶ 9: Dkt. No. 2074-3.) As Dr. Murphy explains, multimedia PCA involves complex mathematics and provides

a comprehensive overview of the interdependencies among the chemicals measured in the samples analyzed; it is a widely used method that is reliable when performed and interpreted correctly, and is entirely appropriate for this type of system. (Ex. A: Murphy R. at 13-15; Ex. E: Murphy Decl. ¶¶ 7-8, 10.) As Dr. Murphy demonstrates in his expert report, when used properly, PCA can be an effective method for identifying sources of contaminants, but PCA cannot identify sources of contaminants when the putative source has not been captured in the PCA. (See Ex. A at 8-10, 30.) Dr. Loftis' criticism of Dr. Murphy's use of multimedia PCA in this case underscores Plaintiffs' general misunderstanding of how PCA works and the boundaries of its utility – PCA cannot tell you anything about fate-and-transport when the putative source is not properly represented in the analysis

Dr. Murphy further testified that multimedia analysis is appropriate in this case because it is one way to incorporate the alleged source into the PCA to determine whether it carries through the media. (Ex. D: Murphy Dep. at 89:10 – 90:7; see also Ex. E: Murphy Decl. ¶ 7.) Because the putative source in this case (poultry litter) is a solid, evaluating different media (solids and liquids) is inherent in any PCA evaluating whether that source is transported from the ground to IRW waters. (Ex. E: Murphy Decl. ¶¶ 7-9) Dr. Olsen relied on edge-of-field samples to capture the alleged poultry litter signature in liquid form, but Dr. Murphy explains that edge-of-field samples are faulty and compromised because they primarily contain the constituents of native soil. (Ex. A: Murphy R. at 32-33.) As a result, the signature of native soil cannot be distinguished from the alleged poultry litter signature Dr. Olsen claims to have identified. In short, no PCA on environmental sample data collected down gradient from edge-of-field samples could be tied specifically to poultry litter. (Id. at 33.)

Dr. Murphy further explains that although a multimedia PCA is one appropriate way to

incorporate an alleged source into the PCA, it is not the only way. (Ex. D: Murphy Dep. at 79:12-21; 89:10 – 90:7; see also Ex. E: Murphy Decl. ¶ 7.) According to Dr. Murphy, Dr. Olsen could have included SPLP leachate samples of poultry litter and compared them in PCA to the constituents of water samples collected downstream from litter applied fields — a single media analysis. (Ex. D: Murphy Dep. at 79:12-21; 89:10 – 90:7 & Ex. 37; see also Ex. E: Murphy Decl. ¶ 8.) Dr. Olsen actually had analytical data for leachate samples from poultry litter but did not use them in any of his analyses. (Ex. D: Murphy Dep. at 350:18-25 & Ex. 37.) Using Dr. Olsen’s SPLP leachate data, Dr. Murphy conducted this single media PCA as well and concluded that, again, no poultry litter signature can be traced to the water samples relied upon by Plaintiffs in this case. (Ex. A: Murphy R. at 32-33.)

**3. Mass Balance Analysis and Chemical Transport Modeling Are Separate and Distinct Analytical Tools from PCA, with No Bearing on the Mathematical Calculations and Analytical Data Evaluated in PCA.**

Plaintiffs also argue that Dr. Murphy’s opinions involving multimedia PCA are “flawed” because Dr. Murphy did not utilize other lines of evidence such as Megan Smith’s mass balance analysis or Dr. Engel’s “chemical transport modeling.” (Dkt. No. 2074 at 4.) Mass balance and chemical transport modeling are entirely separate fields of study that have no bearing on the mathematical calculations of principle components. (Ex. E: Murphy Decl. ¶ 12.) Hence, their absence from Dr. Murphy’s methodologies and opinions constitutes no “flaw” and presents no ground for exclusion.

**4. If a Poultry Litter Signature Exists, the PCA Would Have Distinguished Between Samples Downstream From Litter-Applied Fields and Fields with No Litter Application.**

Finally, Plaintiffs suggest Dr. Murphy’s analysis is flawed because he failed to consider where Cargill litter was actually applied in the IRW when he conducted his multimedia analysis.

(Dkt. No. 2074 at 5, 8-9.) Whether data was included from samples collected down gradient from fields where no litter was applied has absolutely no bearing on the outcome of PCA, a mathematical tool for determining whether there is commonality in sample groups based on their composition. (See Ex. A: Murphy R. at 8.) Inclusion of data down gradient of fields where no litter was applied does not dilute or otherwise undermine the analysis. (Ex. E: Murphy Decl. ¶ 12.)<sup>3</sup>

As Dr. Murphy explains, plots reflect the PC scores of each individual sample. Samples with similar scores group together on the plot and conclusions can be drawn from those groupings. (Murphy R., 29, n. 9.) If a poultry litter signature were present, one would see scores in two groups: those that reflect the signature and those that do not. (Id. at 29.) All environmental samples collected down gradient from Cargill-related operations generated similar scores that group together, and separate from the scores for poultry litter. (Ex. A: Murphy R. at 32-33.) This suggests one of two explanations: (1) no poultry litter signature is present, or (2) no poultry litter was applied at any of the thirty-five Cargill grower locations. (Ex. E: Murphy Decl. ¶ 11.) Either way, Dr. Murphy's analysis shows that no poultry litter signature carries through the environmental media. In short, whether looking to Olsen's analysis or Murphy's analysis, there is no poultry litter signature that carries through the media, nor through the waters of the IRW.

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<sup>3</sup> In addition, and as discussed more fully in the Cargill Defendants' response in opposition to Plaintiffs' motion to exclude the expert opinions of Dr. Andy Davis (Dkt. No. 2064), Plaintiffs are hypocritical to insist that it "is essential for an investigator's evaluation of whether waste from a poultry growing operation has impacted a river or stream" to analyze "whether or how much poultry litter was applied upstream" and to "sample locations downgradient (downstream) of fields where there ahs been land disposal ...." (Dkt. No. 2074-3 ¶ 15, parenthetical in original; see also Dkt. No. 2074 at 5, 9.) Plaintiffs performed no such "essential ... evaluation" themselves.

The Court should deny Plaintiffs' meritless motion because Dr. Murphy's principles and methodology are sound. See, e.g., Tyson Foods, 565 F.3d at 779-80.

**CONCLUSION**

For the reasons set forth above, the Cargill Defendants urge the Court to deny Plaintiffs' motion to exclude the expert testimony of Dr. Brian Murphy.

Respectfully submitted,

June 5, 2009

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**CERTIFICATE OF SERVICE**

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I also hereby certify that I served the attached documents by United States Postal Service, proper postage paid, on the following who are not registered participants of the ECF System:

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